

remote sensor data. At the time of its adoption by the USGS, the majority of remotely sensed data were from airborne camera systems with film formats and land classification was done through visual interpretation. However, the classification scheme was believed to be widely adaptable to computer analyses of digital remotely sensed data. In this system, three to four levels for each of nine major categories were recommended depending on the scale of the imagery available and the amount of detail that could be detected. For example, the Level I category Forest Land (category) is sub-divided into three Level II categories: (41) Deciduous Forest Land, (42) Evergreen Forest Land, and (43) Mixed Forest Land. Within known limitations, the first and second levels of the USGS classification system were used as a basis for the A/P classification since it was desirable, at a minimum, to identify all Level I categories which occur in the A/P drainage area.

The list of potential classes was modified based on prior knowledge of sensor capabilities. In general, land cover is more easily determined than land use. Land cover refers to features or properties - natural or anthropogenic - found on the surface of the ground. Land use, on the other hand, refers to activities occurring on the land. Thus, an area could be covered by grass but it might have an agricultural use (e.g. pasture) or a commercial use (e.g. golf course). The ability to determine land use depends on how well surface features represent activities which are occurring in the area. Determination of land use tends to become even more problematic at more detailed levels of classification. In particular, digital remotely sensed data generally cannot be used to extract many kinds of information on management practices or public use. For example, within Level I, category 1, Urban or Built-up Land, digital spectral data alone could not be used to determine if the land was in residential, commercial or industrial use. It was recommended that other categories of specific interest be investigated to determine if it was feasible to identify them. For example, it would be useful to identify hardwood riverine swamp and Atlantic White Cedar, both of which were in the same Level II category (Forested Wetlands). Further modification of the classification scheme would be based on analysis of digital data. The group also recommended adopting a minimum mapping unit of 5 to 10 acres.

PROJECT MATERIALS

The identification, measurement, and inventory of over 20,000 square miles is a formidable task. The multispectral approach has been shown to be a cost effective and reliable means of gathering data about the earth's surface in a digital format (ASPRS 1983; Khorram et al. 1987). Energy from the sun is reflected or emitted from features on the earth's surface in a characteristic spectral pattern or response. Based on spectral response measured over one or more wavelength ranges (bands) in the electromagnetic spectrum, it is possible to separate and identify different ground cover types. An object or an environmental association's unique spectral response is its signature. It is frequently important to detect and utilize more than one spectral band since different cover types can have the same signature within certain portions of the spectrum.

Landsat Thematic Mapper (TM) multispectral data were selected as the source for this inventory because they offered the potential to produce a broadly consistent database at a spatial, spectral, and temporal resolution that would be useful to resource managers. The Landsat TM